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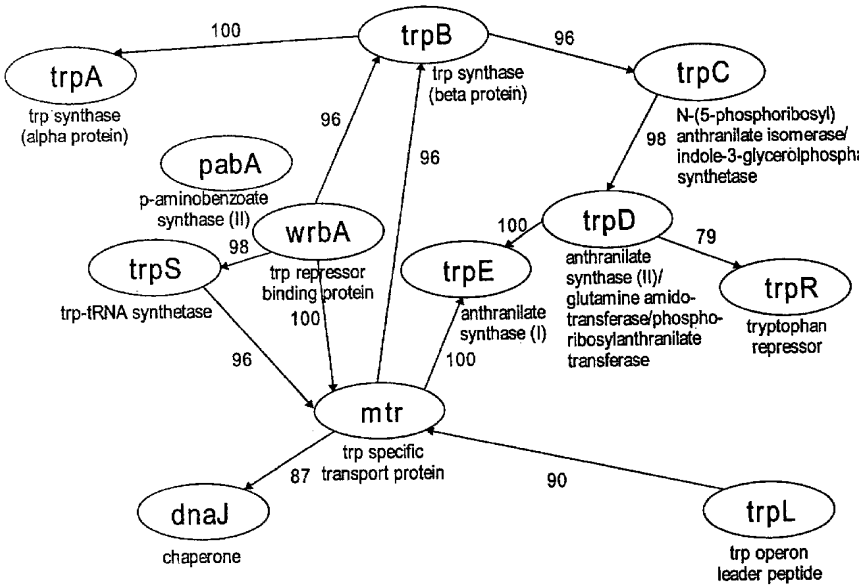
(54) Title: ESTIMATING GENE NETWORKS USING INFERENTIAL METHODS AND BIOLOGICAL CONSTRAINTS



(57) Abstract: The accurate estimation of gene networks from gene expression measurements is a major challenge in the field of Bioinformatics. We present a general approach to reduce the search space to a biologically meaningful subspace and to find optimal solutions within the subspace in linear time by using inferential models constrained by biologically relevant information. We showed the effectiveness of this approach in application to yeast and Bacillus subtilis data. Also, we provide systems and storage media adapted to provide and store data and results of gene network relationships.

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